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► To cite this version:

Federico Ferretti. Pioneers of the History of Cartography: the Geneva map collection of Élisée Reclus and Charles Perron. *Journal of Historical Geography*, 2014, 43 (1), pp.85-95. 10.1016/j.jhg.2013.10.025 . hal-00986226

HAL Id: hal-00986226

<https://hal.science/hal-00986226>

Submitted on 1 May 2014

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Pioneers of the History of Cartography: the Geneva map collection of Élisée Reclus and Charles Perron

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Abstract

In recent years, researchers have rediscovered the important cartographic collection of Élisée Reclus (1830-1905) and Charles Perron (1837-1909), which contains more than 10,000 maps of all kinds from the sixteenth to the twentieth century, including several reproductions of early maps from Antiquity and the Middle Ages. This paper explores the contribution of these two geographers to the history of cartography as a critical discipline, analyzing the construction of the Reclus-Perron cartographic collection. Then, it looks at some examples of its social and political utilization at the beginning of the twentieth century, namely at the Cartographic Museum of Geneva (1907-1922). These materials provide an original social interpretation of the history of cartography as a critical discipline endowed of a social utility, as well as an opportunity to explore a different way of conceiving maps and geography, one which diverged from the uncritical hagiographies of geographical discoveries and cartographic accuracy which were typical of that time.

Keywords: Élisée Reclus; Charles Perron; History of Cartography; Geographic Education; Maps of the World

Between the 19th and the 20th century, map collections were assembled for a variety of social, cultural and political purposes. In this paper, I present a rather original case of a cartographic collection built and made available to a wide public by geographers who were also radical militants, namely the anarchists Élisée Reclus (1830-1905) and Charles Perron (1837-1909).

These two geographers worked together for twenty years to edit Reclus' encyclopedic *Nouvelle Géographie Universelle* (hereafter NGU)¹ written almost completely in Switzerland, where Reclus was an exile of the 1871 Paris Commune and a participant in political networks of anarchists and internationalists, Swiss and exiles, which were frequented also by Perron, who was based in Geneva. During this time they collected abundant cartographic materials which, at the end of the great work, they wished to make available for public betterment and knowledge.

Their entire cartographic collection was left to the City of Geneva and is still held in the *Département de Cartes et Plans* of the public library. Today, it comprises more than 10,000 maps of all kinds (still not completely inventoried), including the raw materials, preparatory drawings, proof copies and notes for the 19 volumes of the NGU. We find in this collection maps from the sixteenth to the twentieth century collected by Perron and Reclus, including several nineteenth-century facsimiles of maps from Antiquity and the Middle Ages. For a decade and a half, some 350 pieces formed the collection of the Cartographic Museum of the City of Geneva, which had been opened by Perron in 1907, but closed in 1922 following a gradual decline after the death of its founder in 1909.

In the publications which accompanied the Museum's opening, one quickly perceives that Perron held an open and inclusive idea of the History of Cartography, which he did not limit to certain techniques or confine to specific times. This recalls some of the Brian Harley's statements questioning the criteria which, for a long time, had excluded certain key documents from the category of maps. According to Harley, 'in many cultures crude, distorted, plagiarized, ephemeral, oversimplified, and small-scale maps have been neglected.

¹ E. Reclus, *Nouvelle Géographie universelle*, Paris, 1876-1894, 19 vols.

Such scientific chauvinism dictates that they are often dismissed as not maps at all or labeled as mere oddities or cartographic curiosities.’²

In his essay *Les Mappemondes* (Maps of the World), Perron stressed the historical importance of the images that every civilization builds of the world: ‘[Though] these general documents do not give detailed information about the diverse phases in the life of peoples, they outline the general view of the grandeur and the decline of civilizations.’³

Analyzing primary sources such as the texts and the archives of these geographers, and the documents now comprising the map collection of the City of Geneva, I interrogate Reclus-Perron's cartographic experience in relation to several compelling topics relevant to current debates. What was the idea of cartography held by these geographers who were at the same time scholars and radical political activists? What was the working of the Cartographic Museum and how did it anticipate the emergence of the history of cartography as a scientific discipline? And what were the political and social uses of the cartographic collection in the Swiss and international context of that time?

In the first part of my paper, I present Charles Perron as an original example of geographer politically engaged and inserted in a network of anarchist scientists exiled in Switzerland at the end of the nineteenth century; in the second part, I approach the relation between the cartographic collection and the general theories of its founders regarding Geography and Cartography; in the third part, I focus on the experience of the Geneva Cartographic Museum as a social endeavor toward a progressive pedagogy.

Charles Perron: cartography and politics

Born in 1837 in Petit-Saconnex, near Geneva, to a socialist family, Charles-Eugène Perron was professionally trained by his father as a draftsman and an enamel painter. His first contacts with geographers took place at the end of the 1860s, when Elisée Reclus went to Switzerland to participate in the 1868 Berne Congress of the League of Peace and Freedom, taking part then in the secret International Brotherhood promoted by Bakunin.⁴ In these years, Perron played an important role in the foundation of the international anarchist movement,

² J. B. Harley, The map and the development of the history of cartography, in J.B. Harley and D. Woodward (eds.), *The history of cartography*, Chicago/London, 1987, 4.

³ Ch. Perron, *Une étude cartographique. Les Mappemondes*, Paris, 1907, 5. All texts quoted from French works have been translated by the author.

⁴ J. Guillaume, *L'Internationale. Documents and souvenirs*, vol. I, Paris, 1985.

cofounding with Reclus the Vevey section of the *Fédération Jurassienne* in 1876.⁵ In 1894, together with his sons Henri and Georges, he was still classified as an anarchist by the Geneva police, which stated that he was ‘in constant touch with anarchists in Geneva and abroad, like the Reclus brothers. His door is always open for the foreign anarchist visitors, including the most dangerous subjects’.⁶

Perron started his career as a cartographer between 1876 and 1877, drawing maps for Reclus’ NGU. As I explain in the next chapter, Reclus and Perron were severe critics of the cartography of their time; nevertheless, they illustrated the 19 volumes of the NGU making more than 6,000 maps, which were intended to follow the discourse developed in the text though not to impose their semantic codes.⁷ To this end, they produced a cartography which now is called ‘thematic’, showing specific features of population, language, religion, climate and topography.

To facilitate the production of the greys and the chiaroscuros necessary for this kind of cartography, Perron adopted the method called *panicographie*, invented by Firmin Gillot,⁸ which allowed the draftsmen to directly transfer their images to the typographic molds, skipping the step of engraving. In the nineteenth century, the adoption of wood engraving instead of the old copper engraving had very important consequences in the map trade,⁹ and new techniques like Gillot’s favored the diffusion of iconographic systems in the geographical publishing of the end of the century.¹⁰ According to Perron, before the adoption of the *panicographie*, ‘the main difficulty, for this kind of cartography, was the engraving of good shades’¹¹ necessary to depict thematic features.

⁵ P. Jud, *Élisée Reclus und Charles Perron, Schöpfer der ‘Nouvelle Géographie Universelle’ : Ein Beitrag zur geographischen Wissenschaftshistoire des 19. Jahrhunderts*, Zürich, 1987, 127-192.

⁶ Berne, Schweizerisches Bundesarchiv, Bestand 21, dossier 7564. Le Conseiller d’État chargé du Département de Justice et Police à Monsieur le Procureur de la Confédération Suisse, 29 mai 1894.

⁷ F. Ferretti, *Il mondo senza la mappa, Élisée Reclus e i geografi anarchici*, Milan, 2007, 101-103.

⁸ F. Gillot, *Album de gravure panicographique et photogravure*, Paris, 1875.

⁹ M. Sponberg Pedley, The Map Trade in Paris, 1650-1825, *Imago Mundi*, n. 33 1981, 33-45.

¹⁰ D. Mendibil, Essai d’iconologie géographique, *L’Espace géographique*, n. 28, 1999, 327-336.

¹¹ J. Brunhes, P. Girardin, Conceptions sociales et vues géographiques : La vie et l’œuvre d’Élisée Reclus, *Revue de Fribourg*, 1908, 362.

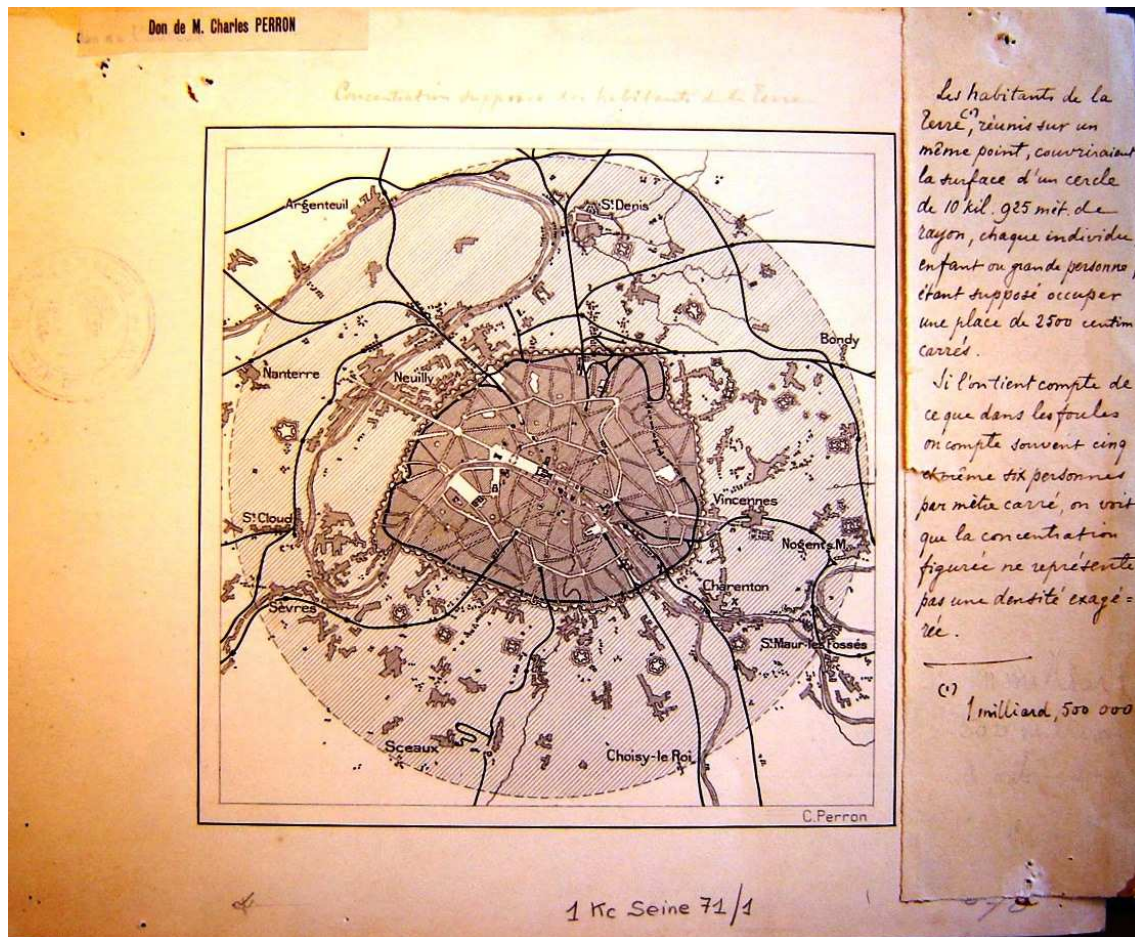


Fig. 1 Perron's Demographic Map exhibited earlier in the Geneva Cartographic Museum. BGE, Département de Cartes et Plans

One of the best examples of this approach is a map drawn by Perron (Fig. 1) to illustrate a text published by Reclus in the *Bulletin de la Société Neuchâteloise de Géographie*,¹² where anarchist geographers tried to counter the contemporary application of Thomas Malthus's principles as proposed in his 1798 *Essay on the Principle of Population*. Using scientific tools to express political concepts, Perron represented the area which would be taken by all humankind, if the 1.5 billion people estimated at that time could meet all together in a fraternal meeting (supposing that four people standing would occupy a square meter). This area was juxtaposed to the map of Paris, a city whose great symbolic value from a political

¹² E. Reclus, À propos d'une carte statistique, *Bulletin de la Société Neuchâteloise de Géographie*, n. 5, 1889-1890, 122-124.

standpoint, owing to the revolutions of the eighteenth and nineteenth centuries.¹³ Reclus' text, using arguments which today refer to the geography of populations, sought to demonstrate that the problem of the resource shortage was not due to the growth of human populations, but to the organization of the global economy and to unequal distribution of wealth. If we consider that now our planet houses more than 7 billion people, we can infer that Reclus' arguments were not mere ideology. This map anticipated the idea of the Paris "Great Globe" as a symbol of human brotherhood, which I analyze in the next chapter.

A cartographic collection and the third dimension of the world

To understand the value of the cartographic collection of Reclus and Perron, we must first see it in its historical context, as well as in relation to the broader scientific production of these authors. As stated by Harley and Woodward, the word cartography 'is a neologism, coined by Manuel Francisco de Barros e Sousa, Viscount of Santarem, in the mid-nineteenth century in particular reference to the study of early maps.'¹⁴ In fact, many great editorial works containing reproductions of the maps from antiquity and the Middle Ages appeared in Europe in the nineteenth century, such as those of Jomard, Lelewel, Desjardins and Nordenskjöld.¹⁵ These works stood among the references for Perron in constructing the Cartographic Museum, and many of the exposed pieces, reproducing early maps, were drawn directly from these sources.

Moreover, Perron's chronologic discourse on the History of Cartography aimed to lead the reader/observer to its most recent stage, specifically the project realized by Perron and Reclus at the end of the nineteenth and the beginning of the twentieth century, which they called *Cartographie nouvelle*. This initiative revolved around the construction of three-dimensional cartographic objects, considered to be more 'true' than the flat Map, whose nature, according to these geographers, is to lie. Reclus proposed to build a Great Globe, 127 meters in diameter, for the Universal Exposition of 1900. Its scale of 1/100,000 would allow

¹³ F. Ferretti, Comment nourrir la planète : A propos d'une carte statistique, in P. Rérat, E. Piguet (ed.), *La pensée du monde : une société de géographie au tournant du XXème siècle*, Neuchâtel, 2011, 111-116.

¹⁴ J. B. Harley, D. Woodward, Preface, in J. B. Harley, D. Woodward (eds.), *The History of Cartography*, Chicago, 1987, XVII.

¹⁵ E. E. A. Desjardins, *La Table de Peutinger, d'après l'original conservé à Vienne*, Paris, 1869-1874 ; E. F. Jomard, *Les monuments de la géographie; ou Recueil d'anciennes cartes européennes et orientales (Atlas)*, Paris, 1842-1862 ; J. Lelewel, *Géographie du Moyen Age. 4 vols.* Brussels, 1852-57; A. E. Nordenskjöld, *Periplus: An Essay on the Early History of Charts and Sailing-Directions*, Stockholm, 1897.

representing altitudes in relief at the same scale as the horizontal dimension (for example, a mountain of 1,000 meters would have a material altitude of a centimeter upon the globe's surface). According to Reclus,

the globe outdoes the map by nature of its truthfulness: it represents the planet in its true structure, it varies exactly according to the real contours, whereas maps, increasingly false as they are applied to greater parts of the planetary surface, can only deceive the viewer regarding the relative dimensions of different regions [while] on the curvature of an artificial globe it is impossible to err with regard to the relative area of the various terrestrial entities.¹⁶

There is already a rich literature on this project, which in the end was not realized for political and financial reasons, but which generated a debate which still impassions researchers.¹⁷ Here, it's enough to consider that this idea goes back to the critical statement of Carl Ritter, who asserted that 'a geographer, who wants to study the world only on maps, makes the same mistake of a physiologist seeking to study the living body only on a corpse.'¹⁸ This criticism of maps was easily adopted by anarchist geographers such as Reclus, Kropotkin and Perron, who already were critical of the near monopoly practised by states and armies in constructing topographical maps. If the art of making globes, already quoted in Strabo's *Geography*,¹⁹ owes to a long cultural tradition of representing the whole world²⁰ which was particularly sparkling in the nineteenth century,²¹ the originality of the Reclus proposal, according to the existing literature, was its symbolic charge in representing the principles of human unity and universal brotherhood, clearly exposed in the Belgian socialist journal *L'Humanité Nouvelle*, which published first the Reclus' project.

¹⁶ É. Reclus, *Projet de construction d'un globe terrestre à l'échelle du cent-millième*, Paris, 1895, 3-4.

¹⁷ S. Alavoine-Muller, Un globe terrestre pour l'Exposition universelle de 1900. L'utopie géographique d'Élisée Reclus, *L'Espace géographique*, Vol. 31, (2003) 156-170; G. Dunbar Élisée Reclus and the Great Globe, in G. Dunbar (ed.), *The History of Geography*, New York, 1996, 12-22; F. Ferretti, *Il mondo senza la mappa*, 191-214; N. Jankovic, Introduction, in É. Reclus, *Projet de globe au 100.000*, Paris, 2011, 7-41.

¹⁸ C. Ritter, *Géographie générale comparée*, Bruxelles, 1837, 19.

¹⁹ Strabo, *Geography*, II, 5, 10.

²⁰ D. Cosgrove, *Apollo's eye. A cartographic genealogy of the Earth in the Western Imagination*, Batimore and London, 2001.

²¹ J. M. Besse, *Face au monde. Atlas, jardins, géoramas*, Paris, 2003.

One problem frequently raised by Reclus was the proportion of the world's different regions on flat maps and atlases, as the citation above shows. Earlier, in 1891, he had proposed a *Uniform Atlas*, representing all the emerged lands, in 38 sheets at the same scale and with the same deformation, where 'at every point of the Atlas equivalent surfaces of the Map represent equivalent surfaces on the earth.'²² This questioning of conventional atlases seems a clear anticipation of the problematic developed in the following century by Arno Peters²³ and an implicit criticism of Eurocentrism, a term yet to be devised.

Nevertheless, this utopian perspective was clearly inserted in the geographical debates of the time. While promoting his *Uniform Atlas*, Reclus was in direct dialogue with the protagonists of another 'universal' cartographic project: the Million-Scale International Map of the World, proposed in 1891 by Albrecht Penck at the Fifth International Geographical Congress (IGC) in Berne.²⁴ According to Alastair Pearson and Mike Heffernan,

the idea can be traced back to the mid-nineteenth century when several cartographers, including Sir Henry James, the Director of the British Topographical Department, raised questions about the practical value of an ever-expanding archive of maps produced by rival national cartographic agencies using differing conventions.²⁵

After Penck's paper, 'an IGC Commission of prominent geographers and cartographers was duly established to investigate the idea, including Penck, Ferdinand von Richthofen, Eduard Brückner and Alexander Supan from Germany, John Scott Keltie and Ernst G. Ravenstein from Britain, Franz Schrader from France, and John Wesley Powell from the United States.'²⁶

Many of these authors had direct links to Reclus, namely Schrader, who was his cousin and a collaborator of the NGU as part of the geographical networks linked to the publisher,

²² G. Guyou and E. Reclus, D'un atlas à l'échelle uniforme, *Bulletin de la Société Neuchâtoise de Géographie*, n. 9, 1896-1897, 163.

²³ A. Peters, *Atlas of the World: The Earth in true proportion for the first time*, Harlow, 1989.

²⁴ Albrecht Penck, Die Herstellung einer einheitlichen Erdkarte am Massstabe von 1:1,000,000, in *Compte Rendu du Vème Congrès International des Sciences Géographiques tenu à Berne du 10 au 14 août 1891*, Berne, 1892, 191-98.

²⁵ Pearson A., Heffernan M., The American Geographical Society's Map of Hispanic America: Million-Scale Mapping between the Wars, *Imago Mundi*, n. 61, 215-243, 215.

²⁶ Pearson A., Heffernan M., The American Geographical Society's Map of Hispanic America, 216.

Hachette,²⁷ and Scott Keltie, who was a friend of Reclus and Kropotkin,²⁸ supporting their participation in the activities of the Royal Geographical Society. Penck corresponded in these years with Reclus, who proposed a collaboration between the *Uniform Atlas* and the International Map projects. In an 1891 letter to Perron, Reclus wrote:

I have read the Penck's proposition: as it seems to be conceived honestly and in a pure scientific spirit, I would have shame and bad conscience in doing anything without alerting him and proposing to him a collaboration. We would have great advantages: 1. He is a true geographer, and a strong worker; 2. He is German, and by our alliance we could escape from this dishonorable and awful impasse of 'French science and German science' [...] We will have surely troubles and difficulties but I think that acting in a different way will be worse.²⁹

I didn't find Penck's reply in this regard; I just know that Penck and Reclus, between 1897 and 1898, worked together on the project for a bilingual (French-German) *Geography of Switzerland*, promoted by the Swiss Association of Geographical Societies.³⁰ Nevertheless, I can infer that the failure of such a proposition was due to the substantial difference between their respective conceptions of a 'World Map'. On the one hand, Reclus and Perron's endeavor was based on voluntarism and 'disinterested science' (that is, not serving state or imperial purposes), aiming to advance the principle of universal brotherhood. On the other hand, the One Million Map project stressed another kind of universalism, working with topographical offices and engaging colonial states, far from the 'pure scientific spirit' to which Reclus aspired.

This did not impeach the existence of a scientific and methodological proximity between the two projects: as already stated by David Livingstone, anarchist geographers like

²⁷ F. Ferretti, Les Reclus et la Maison Hachette : La première agence de la géographie française ?, *L'Espace Géographique*, n. 39, 2010, 239-252.

²⁸ F. Ferretti, The correspondence between Élisée Reclus and Pëtr Kropotkin as a source for the history of geography, *Journal of Historical Geography*, 37, 2011, 216-222; G. Kearns, *Geopolitics and Empire, the legacy of Halford Mackinder*, Oxford/New York, 2009.

²⁹ E. Reclus, *Correspondance*, vol. III, Paris, 1925, 100-101.

³⁰ Bibliothèque de Genève (from now on BGE), Fonds de la Société de Géographie, Ms. Fr. 8021/7, Fédération des Sociétés Suisses de Géographie/Verband der Schweizer Geographischen Gesellschaften.

Reclus and Kropotkin sought to utilize essentially the same scientific instruments as the contemporary geographies of power, though for opposite political purposes.³¹

The Great Globe was clearly the prosecution of the *Uniform Atlas*. What is important to notice is that Perron, in Geneva, worked to build the first pieces of the Globe, namely a relief of Switzerland, in plaster, at the scale of 1/100,000, reproducing the terrestrial curvature underlying Switzerland. In Reclus correspondence with Perron at the time, he alluded to other envisioned projects including a relief of Scotland (unaccomplished) which was to be directed by Patrick Geddes (1858-1932).

What a fine fragment of our globe Switzerland would be [...]. This from now on will be the centerpiece of our drive [...] If that map of Scotland begins, without doubt with the small section Edinburgh-Glasgow, it will bear, if it doesn't seem to you premature, the acknowledgement: Globe fragment projected by E.R., Ch. P. and P.R.³²

Geddes, helped by Kropotkin and Scott Keltie, obtained the support of the Royal Geographical Society,³³ which had discussed the project in one of its sessions in 1898 session of the RGS.³⁴

In those years, Perron was the main international advocate of large-scale reliefs (from 1/500,000 to 1/5,000), as opposed to small-scale reliefs which necessarily exaggerate altitude to make them perceptible.

These objects owed to an old Swiss tradition:³⁵ as shown by William Pearson and Martin Schaefer, the Terrain Models of Joachim Eugen Müller (1752-1833) were among the first attempts to build large-scale reliefs (1/40,000 and 1/60,000) of Swiss alpine regions. According to Pearson and Schaefer, Müller's works clearly had a 'lower level of accuracy in the vertical axis of the model'³⁶ than later representations based on the topographical maps of

³¹ D. Livingstone, *The Geographical tradition*, Oxford, 1992, 254-259.

³² BGE, Dép. des Manuscrits, Ms. Suppl. 119, E. Reclus to Ch. Perron, December, 1st 1895 [P.R. are the initials of Paul Reclus, engineer and nephew of Élisée, who was charged of the technical part of the project].

³³ Royal Geographical Society with Institute of British Geographers (RGS-IBG), Department of Manuscripts, CB7, P. Kropotkin to J. Scott Keltie, January 29, 1896.

³⁴ P. Geddes, J.B. Jordan, H. F. Brin, A great globe: Discussion, *The Geographical Journal*, n. 12, 1898, 406-409.

³⁵ S. Griener, T. Mair, *Symbiose von Wissenschaft und Kunsthandwerk, mit Schweizer Reliefkatalog*, Bern, 2006.

³⁶ A. W. Pearson, M. Schaefer, A Cartometric Analysis of the Terrain Models of Joachim Eugen Müller (1752-1833), Using Non-contact 3D Digitizing and Visualization Techniques, *Cartographica*, n. 44, 111-120.

Switzerland made by General Dufour (between 1832 and 1864) and Hermann Siegfried, (between 1870 and 1926), which, among other sources, were available to Perron for his work. Nevertheless, Perron did not cite Müller, perhaps because there were theoretical differences between their two approaches. According to Thomas Mair and Susan Grieder, Müller's reliefs deserved to make 'better maps'³⁷, namely for the *Atlas Suisse* by Johann Rudolf Mayer and Johann Heinrich Weiss, without developing a discourse on the terrestrial curvature. On the contrary, Perron's reliefs aimed to be autonomous objects, outdoing the map with their greater closeness to 'nature'.

In 1894 he won the endorsement of the Geneva Geographical Society to assemble a first relief of Switzerland at the scale of 1/500,000 for the 1896 Swiss national exposition to be held in the city. As this support was just merely 'moral',³⁸ Perron took part in the exposition only as chairman of the cartographic section, but in the meanwhile he began work on the 1/100,000 version, refining a set of standards for a new relief-based cartography:

1. Reliefs have as their object the depiction of the configuration of the ground just as it is.
2. They should not allow any of the conventions used in geographical maps.
3. Nothing should be represented that is not to scale.
4. Reliefs representing all or part of the earth's crust should replicate the exact curvature.
5. Reliefs should be constructed according to rather precise mechanical procedures so as to achieve mathematical exactitude.
6. Reliefs pertain to the domain of the exact sciences, where art enters only as a secondary consideration.³⁹

These guidelines were presented in 1900 at the Berlin International Geographic Congress by Arthur de Claparède, the Secretary of the Geneva Geographical Society, adding that:

The great advantage of the relief is to complement maps by showing the surface of the earth according to its true form, which the latter cannot do with the numerous conventions which by nature they admit. It is in this way that, from the point of view of

³⁷ S. Grieder, T. Mair, *Symbiose von Wissenschaft und Kunsthandwerk*, 36.

³⁸ Bibliothèque de Genève (BGE), Département des Manuscrits, Ms. Fr. 7996/2, Société de Géographie, Procès-verbaux des séances du Bureau, 1890-97, séance du 4 avril 1894 and 15 mai 1994.

³⁹ Ch. Perron, *Des reliefs en général et du relief au 100.000^e de la Suisse en particulier, mémoire adressé au Jury de la Cartographie à l'Exposition universelle de 1900 à Paris*, Geneva, 1900, 7-8.

the greatest geographers, they instill erroneous ideas, which reliefs are called upon precisely to eliminate or prevent.⁴⁰

After the abandonment of the Great Globe project, Perron had difficulty finding financing for finalizing and displaying his relief of Switzerland, which he hoped to have displayed as an independent object at the 1900 Paris World Fair. He initially obtained a subsidy of 1.500 Francs from the Swiss Federal Council, but this was suddenly revoked after the intervention of a group of Zurich cartographers including Albert Heim, who contested the allocation. The controversy appears to have arisen for political reasons, as the relief of Switzerland was considered a representative ‘figure of the Nation,’⁴¹ and it would be difficult for some conservative Swiss to see it entrusted to an anarchist. But the dispute also took on elements of a conflict between French-speaking and German-speaking geographers, as evident in the numerous pamphlets and articles which appeared at the time. In this debate, a block of Geneva and Lausanne countrymen gave full support to Perron, though this proved in vain.

We know, from a letter sent by Perron to his friend Daniel Baud-Bovy, that the cartographer received a grant of 5,000 Francs from the chocolate-maker Suchard, enabling him to start his work.⁴² Reclus, who lived in Brussels in those years, was unfailing in his encouragement of his friend. ‘Although your undertaking may be held back, it doesn't seem to me that it will be buried: of course, you will have to pursue it with unwavering perseverance.’⁴³

Perron's relief made it to Paris, where it won a Gold Medal, and afterwards it was exhibited in Geneva to full honors. As I will describe in the next section, this new celebrity was decisive in allowing him to open the Cartographic Museum. It is ironic that, whereas the official poster for the exhibition reproduced the most classical Helvetic stereotypes of

⁴⁰ A. De Claparède, Un nouveau procédé de construction des reliefs employé par M. C. Perron, Cartographe à Genève, in *Sonderabdruck aus den Verhandlungen des VII Internationalen Geographen-Kongresses in Berlin, 1899*, Berlin, 1900, 941.

⁴¹ F. Walter, *Les figures paysagères de la nation, territoire et paysage en Europe (16e – 20e siècle)*, Paris, 2004, 329.

⁴² BGE, Département des Manuscrits, Archives Baud-Bovy 270/4, ff. 146-148, Ch. Perron to D. Baud-Bovy, February 5, 1901.

⁴³ Institut Français d'Histoire Sociale (IFHS), 14 AS 232, Correspondance d'Élisée Reclus, É. Reclus to Ch. Perron, July 17, 1897.

mountains and alpinism (fig. 3), Perron's relief is a rare case of a national image of Switzerland which does not include its boundaries (fig. 2); rather, it follows the tradition of 'Natural Region Geography,' independent of political power.⁴⁴



Fig. 2 A photograph of the Perron relief, taken by Fred Boissonnas and autographed by the author – Geneva, Centre d'Iconographie Genevoise, Fonds Boissonnas

⁴⁴ F. Farinelli, *I segni del mondo*, Firenze, La Nuova Italia, 1992.



Fig. 3 Poster for the relief's public exhibition in Geneva, BGE, *Département des Affiches*

After the Reclus' departure from Switzerland, Perron kept in touch with him, who in the last years of his life tried to realize another project aiming at a three-dimensional representation of the world: the *Spherical Atlas*, which he presented in 1902 at the Berlin *Gesellschaft für Erdkunde* (Geographical Society) and in 1903 at the London Royal

Geographical Society, when the most famous Anglophone geographers of that time, such as Mackinder, Herbertson and Ravenstein, took part in the discussion.⁴⁵ This Atlas aimed to represent the whole world on 46 curved sheets of aluminum at the uniform scale of 1:5.000,000, without altitude in relief but with the ‘exact’ terrestrial curvature.



Fig. 4 The Spherical Map of the Western Mediterranean, BGE, *Département des Cartes et Plans*

⁴⁵ É. Reclus, P. Kropotkin, Mr. Mackinder, Mr. Ravenstein, Mr. Herbertson, Mr. Andrews, Mr. Sanderson, On spherical maps and reliefs. Discussion, *The Geographical Journal*, n. 3, (1903) 299.

In contrast to the Great Globe, these objects had to be rather small, to be manipulated in school classrooms for didactic use. The teaching of geography, in fact, was a priority for Reclus as well as for his anarchist colleagues, recalling Pestalozzi's affirmations on the importance of didactic excursions,⁴⁶ and they proposed avoiding flat maps in primary school. During the 1903 session of the RGS, for example, Reclus asserted that flat maps should be 'completely banished' from primary education.⁴⁷ In the same years, Reclus worked with the Barcelona *Escuela Moderna*, founded by Francisco Ferrer y Guardia (1859-1909), to construct several small cardboard globes to show children the real features of the Earth.⁴⁸ Only one sheet of the spherical Atlas was completed, however, representing the Western Mediterranean, and was fabricated in Brussels by Emile Patesson, who made several impressions. Three of these were sent to Perron in Switzerland, to be used as the last piece of his chronological exhibition, representing the so-called 'cartography of future.'

A Cartographic Museum: geography and popular education.

The Cartographic Museum of the City of Geneva, open from 1907 to 1922, was the result of the initiative and persistence of Charles Perron. When Reclus left Switzerland in 1891, he left there more than 6,000 maps of all kinds which had been used as sources and preparatory material for the 19 volumes of the NGU.⁴⁹ This encyclopedic work had been realized by Reclus during his 20-years exile in Switzerland with the collaboration of a network of scientists many of whom were also anarchists and members of the Swiss section of the first International Workers Association: Perron, Pëtr Kropotkin, Léon Metchnikoff, and Gustave Lefançais, among others. The advocacy of public, secular and popular education was central

⁴⁶ P. Elliot, S. Daniels, Pestalozzi, Fellenberg and British nineteenth-century geographical education, *Journal of Historical Geography*, n. 32, 2006, 752-774.

⁴⁷ É. Reclus, On spherical maps and reliefs, *The Geographical Journal*, n. 3, 1903, 290.

⁴⁸ Bibliothèque Nationale de France, Département des Manuscrits Occidentaux, Nouvelles Acquisitions Françaises, Dossier 22914, f. 126-128.

⁴⁹ F. Ferretti, *Anarchici ed editori, reti militanti, editoria e lotte culturali attorno alla Nuova Geografia Universale di Élisée Reclus*, Milan, 2011; P. Jud, *Élisée Reclus und Charles Perron, Schöpfer der 'Nouvelle Géographie Universelle': ein Beitrag zur geographischen Wissenschaftshistoire des 19. Jahrhunderts*, Zürich, 1987; Ph. Pelletier, *Élisée Reclus, géographie et anarchie*, Paris, 2009.

to their political discourse, and it was in the work of the Internationalists in Switzerland that we encounter the earliest expressions of the movement known as ‘liberation pedagogy.’⁵⁰

Perron was one of the forerunners of this movement, writing in the 1868 pamphlet *De l’obligation en matière d’instruction* that ‘Ignorance, here is the organic social vice, the foremost cause of disorder! It is here that it is necessary to strike, and strike hard, because if we can make this cancer disappear, the truth, the final revolution will be accomplished.’⁵¹ In 1876, Reclus and Perron founded the Vevey section of the *Fédération Jurassienne*; in its journal, they advocated the establishment of independent schools, arguing that: ‘We are quite far from being assured the instruction that we need to have the upper hand in our struggle against oppressors. By a bloody irony of fate, it is of them that we must ask what we [can] learn.’⁵²

In spite of the commonplaces describing Anarchists as dreamers and utopians, these militants were very pragmatic in making alliances with other progressives, such as Liberals and Republicans, in the name of establishing public and secular popular education. This is evident, for example, in the collaboration between anarchists such as James Guillaume and Paul Robin (members of the *Fédération Jurassienne*) and the liberal free-thinker Ferdinand Buisson in the editing of the imposing *Dictionnaire de Pédagogie*, creating the foundation for subsequent French policy in public education.⁵³

In Geneva, Perron worked in a similar way: he proposed to the local administration a project following his idea of secular and rational scientific education, but which coincided with some of the purposes of the State’s public cultural institutions, such as Museums. In this task, Perron found support among several local administrators, such as the counselor Piguet-Fages, and the geographer and politician of the Radical Party William Rosier (1856-1924), who dedicated a great part of his career to public education. One recent analysis has noted that when Rosier served his party on the Council of State, from 1906 to 1918, ‘his great victories

⁵⁰ P. Avrich, *The Modern School movement: Anarchism and education in the United States*, Princeton, 2006; F. Codello, *La buona educazione: Esperienze libertarie e teorie anarchiche in Europa da Godwin a Neill*, Milan, 2005.

⁵¹ Ch. Perron, *De l’obligation en matière d’instruction*, Geneva, 1868.

⁵² J. Guillaume, *L’Internationale, documents et souvenirs*, vol. IV, Paris, 1985, 147.

⁵³ P. Dubois, *Le Dictionnaire de pédagogie et d’instruction primaire de Ferdinand Buisson : répertoire biographique des auteurs*, Paris-Lyon-Rouen, 2002.

were linked to the improvements of a school the most egalitarian possible.’⁵⁴ Rosier strongly based his teaching at the University of Geneva on the Perron-Reclus cartographic collection, so much so that a 1908 municipal document affirmed that the collection could be considered the ‘laboratory of the Geography Chair of the University.’⁵⁵

In 1891 Perron described the collection as holding the ‘maps, diagrams and topographic reliefs which served the preparation of the 16 volumes already brought to light of the NGU,’ explaining further that ‘this unique collection comprises more than 6,000 maps. There is little in it that would be a historical or bibliographic curiosity; yet they are generally the best modern maps that we possess, which have a great value for practical geographers. Then the merit of this collection is further enhanced by the presence of a great number of original sketches or collections sent directly to Mr. Reclus.’⁵⁶

Marianne Tsioli, the current curator of the Geneva cartographic collection, recounts Perron's gift to the city as follows:

in 1893, Perron deposited the six thousand eight hundred and thirteen maps united in forty three portfolios at the library, where they became the map collection. In 1902, he added two hundred and forty-eight maps, eighty photographs and forty-one reliefs. Perron and Reclus joined to this gift numerous works of geography and atlases, toward promoting the study of geography.⁵⁷

But, as mentioned earlier, it was only after his success at the Paris 1900 exhibition that Perron stature rose and he gained institutional recognition for the cartographic collection. In 1903 Perron was officially named curator of cartographic collection, whereupon he ‘undertook the methodical classification and cataloging of the collection, and [...] obtained a special allocation of funds [...] In 1905, the map collection of the City of Geneva was installed in the Building at Bastions.’⁵⁸

⁵⁴ C. Fischer, C. Mercier, C. Raffestin, Entre la politique et la science, un géographe genevois : William Rosier, *Le Globe*, n. 143, 2003, 17.

⁵⁵ Archives de la ville de Genève, *Mémorial des séances du Conseil Municipal de la Ville De Genève*, Séance du 27 novembre 1908, 446.

⁵⁶ Ch. Perron, La bibliothèque cartographique de M. Élisée Reclus, *Le Globe. Organe de la Société de Géographie de Genève*, n. 30, 1891, 162.

⁵⁷ M. Tsioli-Bondenmann, Cartes et Plans, in *Patrimoines de la Bibliothèque de Genève*, Geneva, 2006, 191.

⁵⁸ M. Tsioli-Bondenmann, Cartes et Plans, 191.

In those years, the Administrative Council of the City of Geneva launched a call for donations and Perron was gratified with the response. ‘This appeal was a complete success. It was in this way that in 1902 and 1903 the map collection grew to more than a thousand maps, numerous atlases, wall maps, etc., coming mostly from donations.’⁵⁹ In 1904, the cartographer could describe the *mappothèque* as follows:

One finds there for each country, in addition to the administrative or other general maps, numerous regional maps, city plans, etc., as well as maps relating to archeology, ethnography, politics and war. Still others related to geology, the natural production of the soil, agriculture, industry commerce, transportation routes, statistics, etc. A rather large number of maps bear annotations by Mr. Reclus, which in no way diminishes their value [...] Our map collection additionally contains other documents, among these there are found, in significant numbers, special maps with dedications by their authors, unpublished maps by explorers; still others, similarly manuscripts, by known cartographers such as Vuillemin, by celebrated engravers such as Collin; in other words, some rare works.⁶⁰

The classification criteria of the collection were mainly geographical: in his handwritten inventory, Perron catalogued the maps according to the regional organization of the NGU and added only a section of world maps, a section of wall maps and a section of Atlases. If this kind of organization and size had some similarities with other great cartographic collections of that time, like those of Jomard,⁶¹ Nordenskjöld⁶² and Roland Bonaparte,⁶³ we can nonetheless recognize some original features in Perron’s work. Firstly, this ensemble was not created to be a collection: its was based on work materials gathered not for their own value, but for their utility as sources for scientific knowledge, namely for the realization of the NGU.

⁵⁹ Ch. Perron, Collection Cartographique de la Bibliothèque Publique, *Le Globe. Organe de la Société de Géographie de Genève*, n. 43, 1904, 41.

⁶⁰ Ch. Perron, Collection Cartographique de la Bibliothèque Publique, 39.

⁶¹ E.-F. Jomard, *De la Collection géographique créée à la Bibliothèque royale, examen de ce qu'on a fait et de ce qui reste à faire pour compléter cette création et la rendre digne de la France*, Paris, 1848.

⁶² A. E. Nordenskjöld, *Fac-simile-Atlas to the early history of cartography: with reproductions of the most important maps printed in the XV and XVI centuries*, Stockholm, 1889.

⁶³ A. Fierro, La Bibliothèque et les archives de la Société de géographie, *Acta geographica*, n. 52-53, 1982-1983 ; F. Duclos, Un collectionneur, sa bibliothèque et la Société de géographie : Roland Bonaparte (1858-1924), *Acta geographica*, n.107, 1996.

Only during a second period, after receiving donations from Genevan citizens and members of the Geneva Geographical Society, did the collection begin to include a relevant amount of ‘rare’, ‘ancient’ and ‘original’ pieces according to collectors’ standard of the time. Secondly, the main aim of the project was the utilization of maps for a social and public goal: namely, making them truly available to anyone.



Fig. 5 The first part of the Perron’s catalogue, BGE, Département des Cartes et Plans

Though Perron was satisfied to see the map collection secured within the library and archives of the city of Geneva, he nonetheless maintained a broader vision for the role of maps in popular education, and with this he pursued the creation of a Cartographic Museum. On November 14, 1907 the Cartographic Museum opened with a public ceremony attended by Perron (Reclus having died in 1905), Rosier, Piguët-Fages, and De Claparède⁶⁴, aiming to ‘interest a wide public [...] while facilitating scientists’ work.’⁶⁵

The exhibition showed only a sample (some 350 items) of the immense collection, and was organized in six parts: world maps (176 items); the ‘history of cartographic drawing’ (55 items); maritime maps (30 items); maps of Switzerland (50 items); maps of the Canton of Geneva (30 items), and, finally, ‘other maps’ (10 items).

The order of the exhibition was chronological in each section. Perron’s idea of cartographic ‘accuracy’ was surely influenced by the Positivism of the time, whereas today we have a somewhat different vision, being aware, as Matthew Edney writes, of the ‘delusional nature of the promise of cartographic perfection engendered by detailed mapping of extensive territories and, more recently, digital computers and satellite imagery. We can now see that this perfection entails a significant redirection of the cartographic impulse to control the world.’⁶⁶ Nonetheless, I argue that Perron’s position was inserted in a debate where anarchist geographers explicitly criticized the positivistic philosophy of authors such as Comte and Spencer,⁶⁷ sharing some of their secular and ‘progressive’ assumptions but putting at the same time the basis to overstep the idea of linear progress.⁶⁸ In the case of cartography, Perron and Reclus considered as their main goal not the realization of greater accuracy, but the building of new representations of the world and giving them a social use by as in initiatives like the Great Globe, the Cartographic Museum and their collaboration with popular schools and university extensions. In questioning existing conventions, they stressed what today we would call ‘the limits of representation’.⁷⁰

⁶⁴ BGE, Département des Manuscrits, Biographies Genevoises, 1909, Charles Perron.

⁶⁵ Ch. Perron, *Catalogue descriptif du Musée cartographique / Dépôt des cartes de la Ville de Genève*, Geneva, 1907, 3.

⁶⁶ M. H. Edney, Mapping parts of the world, in J. R. Akerman and R. W. Karrow Jr. (eds.), *Maps: Finding Our Place in the World*, Chicago, 2007, 156.

⁶⁷ P. Kropotkin, *Modern Science and Anarchism*, London, 1912.

⁶⁸ E. Reclus, *Évolution, Révolution et l’idéal anarchique*, Paris, 1898.

⁷⁰ F. Farinelli, G. Olsson, D. Reicher, *Limits of representation*, Munich, 1994.

Moreover, Perron's representation of the History of Cartography was quite innovative for his time, especially when compared to other contemporary Museums built to mythologize the nation and its historical roots, or to demonstrate European 'superiority' to the 'exotic' or 'primitive' peoples it colonized.⁷¹ First, the collection emphasized a unifying vision of the world, as demonstrated by the numerical priority given to world maps. Second, its vision of the world embraced extra-European representations, including for example reproductions of a dozen Hebrew and Arabic world maps from antiquity and the Middle Ages, and two ancient maps from Nubia and Mesopotamia, opening the section on the history of cartographic drawing.⁷² Thirdly, both the collection and the Museum were informed by a clear task of propaganda in favor of the three-dimensional representations of the world, presenting the 'cartography of the past' followed by the so-called 'cartography of future': as we stated, the exhibition ended displaying the first aluminum sheet of the Spherical Atlas sent by Reclus, writing to Perron that 'the Earth is round, and consistent maps also should be.'⁷³

Perron also experimented with new photographic techniques to simulate, using reliefs, aerial photographs from various heights with different lightening. The example shown here was a map simulating a spatial vision of Switzerland from the height of 180 km,⁷⁴ anticipating the modern satellite image as well as "nineteenth-century taste for drawn and painted panoramas and dioramas," according to Denis Cosgrove, had anticipated 'physical flight.'⁷⁵

The relative scarcity of extra-European images likely owed more to their rarity than to an ideological choice. A survey of the present cartographic archive, including the interesting collection of Asian maps, suggests that most such materials were acquired only with recent donations. But further supporting such an interpretation of Perron's stature, is that the collection includes some long-held documents which were obvious apologies for colonialism, including disparaging figures treating the other 'races,' yet these materials were not included

⁷¹ J.-F. Staszak (ed.), 'L'Exotisme', *Le Globe*, Vol. 148 (2008) special issue; T. Mitchell, Orientalism and exhibitionary order, in N. B. Dirks (ed.), *Colonialism and Culture*, Ann Arbor, 1992, 289-317; S. Reubi, *Gentlemen, prolétaires et primitifs : Institutionnalisation, pratiques de collection et choix muséographiques dans l'ethnographie suisse, 1880-1950*, Bern, 2011.

⁷² C. Perron, *Catalogue descriptif du Musée cartographique*, 8-24 ; 47-48.

⁷³ BGE, Département des Manuscrits, Ms. Suppl. 119, E. Reclus to Ch. Perron, November 9, 1902.

⁷⁴ C. Perron, *Catalogue descriptif du Musée cartographique*, 63.

⁷⁵ D. Cosgrove, *Apollo's eye*, 206.

in the exposition. We can suppose this was an ideological choice: as already stated,⁷⁶ Reclus and the anarchist geographers were early and radical opponents of colonialism, racism and European hegemony.

The founder of the Cartographic Museum was aware of the roles maps had played as ideological tools. Addressing the transition from Antiquity to the Middle Ages, he stated ironically that the transformation of cartography in late Antiquity took place because ‘Christian culture considered the science of the pagans (Greeks and Romans) as false and very dangerous for the souls’ health.’⁷⁷ Nevertheless, according to Perron, that was not a reason to avoid divulging or exploring this period in the history of cartography.

In addition to the catalogue, another publication accompanied the 1907 opening of the Museum, namely a history of maps of the world: *Les mappemondes: une étude cartographique*. By way of this short history of representations of the world, Perron made his case for the establishment of Cartographic Museums.

I would like to succeed in bringing out, at least in part, the importance that cartographic museums could hold for scientific studies as well as for public education. Indeed, it is not sufficient to be [merely] aware that there exist old documents in the history of cartography; it ought to be that, as with the canvases of art galleries, they are available to all. Stored in boxes, their utility is most limited, since we only remove them, one by one, when by chance some scholar requests them. This isn't good enough. What products, other than those of analysis, can the consultation of isolated documents yield? Comparative studies allowing their simultaneous viewing would certainly also have their value. Then yet, in our century of democratic instruction, shouldn't we bring to light this human endeavor which is perhaps the greatest and most important of all, that which, beginning in the remoteness of centuries past, is still pursued with passion today: the discovery of the Earth?⁷⁸

⁷⁶ F. Ferretti, They have the right to throw us out: Élisée Reclus' Universal Geography *Antipode*, 1, 2013, DOI: 10.1111/anti.12006; F. Ferretti and Ph. Pelletier, Sciences impériales et discours hétérodoxes: La géographie d'Élisée Reclus et le colonialisme français, *L'Espace Géographique*, n. 42, 2013, 1-14.

⁷⁷ Ch. Perron, *Catalogue descriptif du Musée cartographique*, 13.

⁷⁸ Ch. Perron, *Une étude cartographique. Les Mappemondes*, Paris, 1907, 44.

If Perron owes much to nineteenth-century traditions, I nonetheless argue that his notion of cartographic history diverged from some prevailing concepts of that century, when, according to Harley, ‘the history of cartography was not studied as an independent subject but remained primarily a handmaiden to the history of geography defined as the history of geographical discovery and exploration.’⁷⁹ Perron's advocacy of cartographic museums seems consistent with the idea of cartographic history as an independent and inclusive field of study. The Geneva Geographical Society backed Perron in his initiative, and entrusted him with presenting the proposal at the 1908 International Geographic Congress. Archival materials from the Society's central Bureau have recently become available at the Geneva Library, and institutional memoranda from the time reveal the interest of the Society in ‘making copies of the rare and ancient maps to preserve them and allow the opening of new Museums.’⁸⁰

The International Congress accepted the proposal, asking Perron and others to study the conditions by which the ‘cartographic monuments of humankind’ could be made available to the public. Among the resolutions and wishes voted upon and approved at the Congress was the following:

The Ninth International Congress of Geography expresses the wish that the geographical societies truly seek to interest the governments of their respective countries to conserve the cartographic monuments of antiquity, the Middle Ages and the Renaissance, documents of great scientific value, and which time threatens to destroy. The Congress names MM. Nordenskjöld, K. Miller, G. Marcel E. Oberhummer and C. Perron members of a Commission with a mandate to centralize the results obtained in this vein, to present to the next Congress a catalog giving the general state of repair of old maps in facsimile, and to determine in order of importance the old cartographic documents whose conservation would be especially desirable. The Commission will be able to add, by nomination, members belonging to the various countries possessing cartographic documents.⁸¹

⁷⁹ B. Harley, The map and the development of the history of cartography, in J.B. Harley and D. Woodward (eds.), *The history of cartography*, Chicago/London, 1987, 14.

⁸⁰ BGE, Département des Manuscrits, Ms. Fr. 7996/3 Société de Géographie, Procès-verbaux des séances du Bureau 1907-1916, Séance du 5 juillet 1907.

⁸¹ Neuvième Congrès International de Géographie. Genève, 27 juillet – 6 août 1908, *Résolutions et vœux votés par l'assemblée des délégués le lundi 3 août et le jeudi 6 août 1908*, Genève, 1908, 22-23.

Perron died in 1909, and the Museum remained opened under the direction of Charles Schöndelmayer. Without its indefatigable animator, however, the institution declined, the number of visitors diminished, and the city of Geneva decided to close it in 1922 ‘as a measure of economy’.⁸²

Conclusion

The historical works of Charles Perron and Élisée Reclus found today in the Geneva cartographic collection anticipate some features of our present conception of the history of cartography as a scientific and critical discipline. An inclusive notion of cartography permitted Reclus and Perron to organize a collection and develop a public discourse which was not constrained by preconceived chronological or technical limits. This broad conception is evident, for example, in their recognition of the limitations of flat maps, which led them to experiment with other forms of spatial representation, including globes, reliefs and three-dimensional objects which then entered as well in the field of the history of cartography and in the frame of the richness and heterogeneity of map collections at that time.

The Cartographic Museum and the proposal for more such museums presented at the 1908 International Geographic Congress were not only an early effort to produce a critical discourse on cartography, but also an affirmation of the social and pedagogical value of maps at a historical moment which saw the expansion of public educational and cultural institutions in several European nations. For geographers who were also anarchist activists, this endeavor had a strategic value in that it allowed them to advocate the expansion of popular, secular and rational education for both children and adults of the lower classes. In an epoch when the great cartographic collections were held in private collections or in libraries not easily accessible for a wide public, the idea to open cartographic museums seems rather advanced and the decisions of the 1908 IGC showed that Perron was a leading figure for this proposition.

Finally, we can consider this experience as another example of the scientific and political strategy of anarchist geographers as Reclus and Perron, who tried to utilize the tools of contemporary science to improve their project of social transformation, working on the

⁸² M. Tsioli Bondenmann, *Cartes et Plans*, 192.

construction of secular non-dogmatic knowledge, making available science for the masses while criticizing the ideological limitations of more conventional maps..